Claims: This listing of claims replaces all claims in the original application.

1. (Amended): A safety system for a host vehicle whose driver can be protected from audible noise, said safety system comprising:

   (a) one or more directionally discriminating microphones on said host vehicle that discriminate against audible noise made by said host vehicle,

   (b) one or more loudspeakers positioned so that said driver can clearly hear sounds produced by said loudspeakers

   (c) signal processing means whose functions include amplifying signals from said microphones and feeding amplified signals from said microphones to said loudspeakers,

   said microphones sensing sounds made by objects in said host vehicles environment, and said safety system is configured so that said driver hears reproductions of the sounds made by nearby vehicles that are close enough to said host vehicle that said driver should be aware of said nearby vehicles for purposes of safe driving, said driver can approximately locate by ear the position of said nearby vehicles that he or she apparently hears, and said driver is generally unaware of sounds from said safety system that originate from said host vehicle, whereby said driver is made aware of the presence of said nearby vehicles behind or beside said host vehicle, and said directionally discriminating microphones in combination with said signal processing means greatly improve the quality of sounds provided to said driver so that said driver is not annoyed by additional noise from said host vehicle, said signal processing achieving said improvement in signal quality in part by continuously, or nearly continuously, changing the gain for at least one part of the audio spectrum based on signal intensity in another part of the audio spectrum, thus exploiting the directional property of said microphones and the frequency characteristics of the sound of vehicle tires rolling on pavement.

2 (Original): A safety system as in claim 1 wherein said loudspeakers are mounted in positions such that they are closer to said driver's ears than to the ears of other occupants of said host

vehicle when seated in vehicle seats, whereby passenger in said host vehicle are generally not aware of sounds from said safety system.

3. (Previously presented): A safety system as in claim 1 wherein said driver is protected from audible noise by a passenger compartment of said host vehicle, said loudspeakers are two or more in number, and at least one of said loudspeakers is mounted in a position that is closer to the left ear of said driver than to the right ear of said driver, and at least one other of said loudspeakers is mounted closer to the right ear of said driver than it is to the left ear of said driver, and said loudspeakers are positioned close to the driver's ears compared with distances to said passenger compartment windows and roof, and said loudspeakers close to the left ear receive signals that originated from said directionally discriminating microphones that are shaped, located and oriented so as to favor sounds originating from the left side of said host vehicle and said loudspeakers close to the right ear receive signals that originated from said directionally discriminating microphones that are shaped, located and oriented so as to favor sounds originating on the right side of said host vehicle, whereby said driver can easily determine by ear the location of said nearby vehicles.
4. (Previously presented): A safety system as in claim 1 wherein said signal processing means includes a dynamic range compressing signal processing means whereby the amplification gain of said signal processing means, between the inputs from said microphones and outputs to said loudspeakers is automatically and progressively reduced as the signal levels increase, whereby mitigating unusually loud sounds.
5. (Original): A safety system as in claim 1, further including at least one pavement condition monitoring microphone deployed such that said pavement condition monitoring microphone senses predominately tire noise from said host vehicle, the signals from said pavement condition monitoring microphones being used to change properties of said signal processing means, whereby adjusting said safety system for variable conditions of pavement conditions, weather conditions, and the speed of said host vehicle.
6 (Original): A safety system as in claim 1 wherein said signal processing means includes means for automatically setting the sound volume of said safety system to a level sensitive

enough to hear conversations outside said host vehicle when said host vehicle is moving slowly, whereby reducing the risk of injuring people while said host vehicle is moving backward.

7. (Previously presented): A safety system as in claim 1 wherein said signal processing means includes means for automatically setting the sound volume of said safety system to a level sensitive enough to hear conversations outside said host vehicle when the transmission of said host vehicle is in reverse, whereby reducing the risk of injuring people while said host vehicle is moving backward.
8. (Previously presented): A safety system as in claim 1, further including means for automatically reducing the sound volume of a radio or entertainment sound system of said host vehicle when the transmission of said host vehicle is in reverse, whereby reducing the risk of injuring people while said host vehicle is moving backward.
9. (Original): A safety system as in claim 1 wherein said signal processing means includes a volume control means that said driver can adjust to change the level of sound that reaches his or her ears from said loudspeakers for a given circumstance of sound producing objects outside and near said host vehicle.
10. (Original): A safety system as in claim 1 wherein said host vehicle has a driver's seat in a passenger compartment, further including driver changeable control means that affect the characteristics of said signal processing means, said driver changeable control means being mounted on said driver's seat or a head rest on said driver's seat.
11. (Previously presented): A safety system as in claim 1 wherein at least one of said directionally discriminating microphones is a left microphone that is deployed to preferentially sense sounds that originate from the left side of said host vehicle, and at least one of said directionally discriminating microphones is a right microphone that is deployed to preferentially sense sounds that originate from the right side of said host vehicle, and said signal processing means include one filter means that predominately affects signals originating from said left microphone, and another filter means that predominately affects signals originating from said right microphone, and these said filter means for the left and

right signals affect the signals from said left microphone and said right microphone differently, whereby these deliberately unmatched filters allow people with one ear more capable than the other to determine with one good ear on which side a nearby vehicle is located.

12. (Original): A safety system as in claim 11 wherein the signals from said unmatched filters are combined into a single signal before being converted to sound by said loudspeakers.
13. (Previously presented): A safety system as in claim 1 wherein said signal processing means includes one or more level-dependent signal processing means that have frequency response properties that change based on a control signal, said control signal originating from said directionally discriminating microphones, said control signal responding to signal levels in a frequency region that is high enough whereby the directional properties of said directionally discriminating microphones are effective, whereby said control signal indicates a source of external sound that is not the host vehicle, said level-dependent signal processing means having as their signal input signals originating from said directionally discriminating microphones, said level-dependent signal processing means having outputs that go toward said loudspeakers, and said frequency response properties change at rates that are substantially below audio frequencies, whereby the sounds provided by said safety system to said driver are realistic representations of sounds made by nearby vehicles, and whereby signal components of lower frequencies than can be effectively selected by the directional properties of said directional microphones can be controlled by the directional properties of said directional microphones.
14. (Previously presented): A safety system as in claim 13 wherein said level-dependent signal processing means has no noticeable effect under low sound level conditions, such as sound levels of a normal conversation near a slowly moving vehicle.
15. (Previously presented): A safety system as in claim 1 wherein the directional properties of one or more of said directionally discriminating microphones are achieved by one or more tapered acoustic waveguides, with one microphone for each waveguide, wherein each said waveguide has its larger end opening in the rear of said host vehicle to the exterior of said

host vehicle, and with the smaller end of said waveguide inside said host vehicle, and with said smaller end of said waveguide holding any components of said directionally discriminating microphone that are sensitive to water, thereby achieving directionally discriminating microphone properties and sheltering water sensitive components.

16. (Previously presented): A safety system as in claim 15 wherein each opening of said large end of each said acoustic waveguide is shaped so that the spatial patterns of high selectivity have a desirable shape about the axes of highest sensitivity.
17. (Original): A safety system as in claim 15 wherein the directions of high sensitivity of said acoustic waveguides point nearly straight back from said host vehicle and the openings of said acoustic waveguides are substantially asymmetric from left to right so that for sounds originating to the sides of said host vehicle, substantially away from the direction of peak sensitivity, at least one of said microphones is more sensitive to sounds originating from the left of said host vehicle, and at least one of said microphones is more sensitive to sounds originating from the right of said host vehicle.
18. (Original): A safety system as in claim 15 wherein said large end openings of said tapered acoustic waveguides are covered by screens, whereby keeping insects and other objects out of said waveguides and reducing noise caused by air moving past said host vehicle.
19. (Canceled):
20. (Amended): A safety system for a host vehicle whose driver can be protected from audible noise, said safety system comprising:
    (a) one or more microphones on said host vehicle
    (b) one or more loudspeakers positioned so that said driver can clearly hear sounds produced by said loudspeakers
    (c) signal processing means

    said microphones sensing sounds made by objects in said host vehicles environment, and said safety system is configured so that said driver hears reproductions of the sounds made by nearby vehicles that are close enough to said host vehicle that said driver should be aware of said nearby vehicles for purposes of safe driving, said driver can approximately locate by ear

the position of said nearby vehicles that he or she apparently hears, whereby said driver is made aware of the presence of said nearby vehicles behind or beside said host vehicle, and said signal processing means includes a function that exploits the spectral nature of tire noise and the acoustic properties of said host vehicle and said nearby vehicles, and said function includes automatically changing gains in one part of the audible spectrum based on signal intensity in another part of the audible spectrum so as to make said driver less aware of sounds originating from said host vehicle.